

# Locally Equivalent Weights for Bayesian MrP

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# Are US non-voters becoming more Republican?

## **Blue Rose research says yes:**

“Politically disengaged voters have become much more Republican, and because less-engaged voters swung away from [Democrats], an expanded electorate meant a more Republican electorate.”

(Blue Rose Research 2024)  
(major professional pollsters)

## ***On Data and Democracy says no:***

“Claims of a decisive pro-Republican shift among the overall non-voting population are not supported by the most reliable, large-scale post-election data currently available.”

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- The problem is very hard (it's difficult to accurately poll non-voters)
  - Different data sources
  - ★★★ **Different statistical methods**
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## Our contribution

We define “MrP local equivalent weights” (MrPlew) that:

- Are easily computable from MCMC draws and standard software, and
- Provide MrP versions of key diagnostics that motivate calibration weighting.

⇒ **MrPlew provides direct comparisons between MrP and calibration weighting.**

- Introduce the statistical problem and two methods (CW and MrP)
- Describe covariate balance, one of the classical CW diagnostics
- Define MrPlew weights and connect them to covariate balance
- Example of real-world results
- Future directions

Note that there was no talk of correct specification for the data you have.

That was a foregone conclusion when we started looking at equivalent weights!

How do you perform model checking with sensitivity analysis?

Existing methods evaluate whether the analysis changes “a lot” when you:

- Parametrically perturb the model (e.g. fit a richer model class)
- Non-parametrically perturb the data (e.g. produce gross outliers)

The problem is:

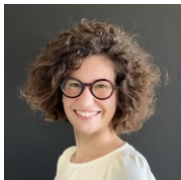
- How much is “a lot”?
- Non-parametric data perturbations are hard to reason about
- It’s hard to say whether parametric model changes are enough

Instead, we

- Parametrically perturb the data
- Observe whether our model could detect the change
- Know exactly the expected change (don’t have to decide on what “a lot” means)
- Easy to reason about whether the data perturbation is reasonable
- Don’t need to propose an alternative model, instead study the model you have

### Student contributions and future work:

- **Alice Cima** contributed significantly to this work
- **Vladimir Palmin** is working on extending MrPlew to lme4
- **Sequoia Andrade** is working on generalizing to other local sensitivity checks
- **Lucas Schwengber** is working on novel flow-based techniques for local sensitivity

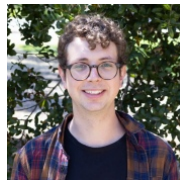


Alice Cima

No picture!  
Vladimir Palmin



Sequoia Andrade



Lucas Schwengber

# References



Blue Rose Research (2024). *2024 Election Retrospective Presentation*. <https://data.blueroseresearch.org/2024retro-download>. Accessed on 2024-10-26.



Bonica, A. et al. (Apr. 2025). *Did Non-Voters Really Flip Republican in 2024? The Evidence Says No*. <https://data4democracy.substack.com/p/did-non-voters-really-flip-republican>.